federal register

Thursday
October 18, 1979

Part IV

Department of Energy

Economic Regulatory Administration

Solar Energy and Renewable Resources Respecting the Federal Standards Under the Public Utility Regulatory Policies Act of 1978; Proposed Voluntary Guideline and Public Hearings

DEPARTMENT OF ENERGY

Economic Regulatory Administration

[Docket No. ERA-R-79-46]

Voluntary Guideline for Solar Energy and Renewable Resources Respecting the Federal Standards Under the Public Utility Regulatory Policies Act of 1978; Proposed Guideline and Public Hearings

AGENCY: Economic Regulatory Administration, Department of Energy.

ACTION: Notice of proposed voluntary guideline and public hearings.

SUMMARY: On June 20, 1979, the President directed the Department of Energy (DOE) to develop and publish within 120 days a voluntary guideline, applying specifically to solar energy and renewable resources, for the ratemaking and other regulatory policy standards established under Title I of the Public Utility Regulatory Policies Act of 1978 (PURPA). Appendix A to this Notice contains the proposed vuluntary guideline for solar energy and renewable resources. Written comments will be received and two public hearings will be held with respect to the proposed guideline.

DATES: Comments by December 10, 1979. Requests to speak by November 15, 1979, 4:30 p.m. Hearing dates: Washington, D.C. hearing—December 4, 1979, 9:30 a.m.; Kansas City, Missouri hearing—November 29, 1979, 9:30 a.m.

ADDRESSES: All comments addressed to: Department of Energy, Office of Public Hearings Management, Docket No. ERA–R–79–46, 2000 M Street, NW., Room 2313, Washington, D.C. 20461. Requests to speak addressed to: Department of Energy, Office of Public Hearings Management, Docket No. ERA–R–79–46, 2000 M Street, NW., Room 2313, Washington, D.C. 20461, telephone (202) 254–5201. Hearing locations: Washington, D.C. hearing: 2000 M Street, NW., Room 2105, Washington, D.C. 20461; Kansas City, Missouri hearing: 601 East 12th Street, Room 140, Kansas City, Missouri 64106.

FOR FURTHER INFORMATION CONTACT: Dr. Stephen S. Skjei, Division of Regulatory Assistance, Office of Utility Systems, Economic Regulatory Adminstration, Department of Energy, 2000 M Street, NW., Room 4016D, Washington, D.C. 20461, telephone (202) 254–8209. William L. Webb, Office of Public Information, Economic Regulatory Administration, Department of Energy, 2000 M Street, NW., Room B–110, Washington, D.C. 20461, telephone (202) 634–2170. Mary Ann Masterson, Office of General Counsel, Department of Energy, 20 Massachusetts Avenue, NW., Room 3228, Washington, D.C. 20461, telephone (202) 376–9469.

SUPPLEMENTARY INFORMATION:

I. Background

On June 20, 1979, the President directed DOE to develop and publish within 120 days a voluntary guideline, applying specifically to solar energy and renewable resources, for the 11 standards established in the Public Utility Regulatory Policies Act of 1978 (PURPA), Pub. L. 95–617, 92 Stat. 3117 *et seq.* (16 U.S.C. 2601 *et seq.*). The 11 standards, specified in detail by sections 111(d) and 113(b) of PURPA, are summarized as follows:

(1) *Cost-of-Service Standard:* Rates to each class of consumers shall be designed to the maximum extent practicable to reflect the costs of providing service to that class;

(2) *Declining Block Rates Standard:* Declining block energy charges that are not cost-based shall be eliminated;

(3) *Time-of-Day Rates Standard:* Time-of-day rates shall be established, if cost-effective, where costs vary by time of day;

(4) *Seasonal Rates Standard:* Seasonal rates shall be established where costs vary by season;

(5) *Interruptible Rates Standard:* Interruptible rates based on the costs of providing interruptible service shall be offered to commercial and industrial customers;

(6) *Load Management Techniques Standard:* Load management techniques shall be offered to consumers where practicable, cost-effective, reliable and useful to the utility for energy or capacity management;

(7) *Master Metering Standard:* Master metering shall be prohibited or restricted for new buildings to the extent necessary to carry out the purposes of Title I of PURPA;

(8) *Automatic Adjustment Clauses Standard:* Automatic adjustment clauses shall not be allowed unless they provide efficiency incentives and are reviewed in a timely manner;

(9) *Consumer Information Standard:* All consumers shall receive a clear and concise explanation of applicable and proposed rate schedules, and annual consumption, upon request;

(10) *Procedures for Termination of Service Standard:* Service shall not be terminated except pursuant to certain enumerated procedures; and

(11) *Advertising Standard:* Political or promotional advertising shall not be charged to ratepayers.

PURPA requires each State regulatory authority, with respect to each utility for which it has ratemaking authority and certain nonregulated electric utilities, to consider the standards within the time frames, procedures and other requirements established by PURPA and to make a specific determination with respect to the implementation or adoption of each standard.

Section 131 of PURPA gives the Secretary of Energy the authority to prescribe voluntary guidelines respecting consideration of the standards. Congress intended that, in formulating these guidelines, the Secretary utilize a procedure involving significant input from concerned persons.

On August 20, 1979, DOE issued a Notice of Intent (44 FR 49998, August 24, 1979) setting forth, among other things, its intentions with respect to the exercise of its authority under PURPA to promulgate voluntary guidelines for the standards. On August 24, 1979, DOE issued a Notice of Inquiry (44 FR 50635, August 29, 1979) to solicit public comments for consideration by DOE in developing a guideline for applying the PURPA standards to solar energy and renewable resources. DOE received and considered 33 written comments in response to the Notice of Inquiry. These comments, DOE's response to them, and the proposed guideline are discussed below.

II. Discussion of Comments and DOE's Response.

The following is a discussion of comments received and DOE's response to these comments. The discussion is organized according to the general areas of concern expressed by the commenters.

A. Definition of Solar Energy and Renewable Resources

The majority of the commenters agreed with DOE's definition of solar energy and renewable resources. A number of them felt, however, that (1) "biomass" might be loosely interpreted to include oil, gas and coal; (2) energy stored in the atmosphere, wave action and ocean currents which appeared to be excluded from the definition should be included; and/or (3) solar energy and renewable resource were not synonomous.

DOE did not intend to have biomass interpreted to include oil, natural gas and coal. The expanse of time needed to regenerate these resources is significant and not comparable to that required for wood and other traditional biomass types. Therefore, oil, natural gas and coal are not considered renewable in the

DOE's sense of the definition. DOE considers energy stored in the atmosphere to be included within the meaning of the proposed definition.

DOE agrees that solar energy and renewable resources are not synonomous. In the proposed guideline, DOE has decided to use the terms "solar energy and renewable resources" to make it clear that the guideline includes both concepts. Furthermore, DOE has restricted the definition to dispersed (on-site) technologies for which solar energy and renewable resource systems provide only a portion of end-use requirements, the remainder being provided through retail purchases of utility generated electricity.

B. Factors To Consider in Cost-of-Service Determination

The majority of commenters felt that the factors considered in the determination of cost of service for customers using solar energy and renewable resource systems should be consistent with the factors considered in cost-of-service determination for other customer classes (basically energy, customer and demand-related costs.) DOE agrees that in determining cost of service, solar energy and renewable resource customers should not be treated differently than other customers. However, the proposed guideline does not identify precise factors to be considered for cost-of-service considerations but addresses more general cost-of-service issues.

C. Treatment of Solar Energy and Renewable Resources as a Separate Tariff Class

Many commenters agreed that if solar energy and renewable resource customers impose costs and demands similar to others in an existing class, then a separate tariff class is not warranted. However, several commenters made the observation that if rates are structured on a time-differentiated basis, there is no need for a separate tariff class. A few commenters insisted that solar energy and renewable resource customers be placed on a separate tariff.

DOE agrees that a separate tariff class for solar energy and renewable resources may be justified under certain circumstances and has structured the guideline accordingly.

D. Factors To Consider in Assessment of Impact of Time-of-Day, Seasonal, Interruptible and Declining Block Rates on Solar Energy and Renewable Resource Customers

Commenters provided both general and specific factors they felt should be considered in assessing the impact of alternative rate designs on solar energy and renewable resources. These factors ranged from customer load shapes and storage capacity to meteorological conditions.

DOE agrees with many of the factors presented by various commenters. However, in most cases the factors raised by commenters were generally applicable and were not specifically related to solar energy and renewable resource systems. In this guideline DOE chose to emphasize the relationship between various rate designs and the use of solar energy and renewable resource systems. For this reason the factors which would be generally applicable in making a PURPA determination on a rate design are not addressed here.

E. Factors To Consider in Assessing Use of Solar Energy and Renewable Resources as Load Management Devices

Commenters suggested several factors which should be considered in assessing the usefulness of solar energy and renewable resources as load management devices.

DOE agrees with some of the factors provided by the commenters and has included them in the guideline. Other factors suggested by commenters were determined to be generally applicable to assessing load management capability, and not specifically related to solar energy and renewable resources. Therefore, these factors are not addressed in this guideline. In the guideline DOE has suggested that a solar energy and renewable resource system, suitably configured, may provide load management benefits consistent with the definition of "load management techniques" in Title I of PURPA. However, DOE cautions that not all solar energy and renewable resource systems can provide useful load management advantages. Whether solar energy and renewable resource systems can act as load management devices should be determined on a case basis.

F. Factors To Consider in Assessing Impact of Master Metering on Solar Energy and Renewable Resources

Some commenters felt that the cost-benefit assessment of master metering in multi-unit dwellings would be the same with solar energy and renewable resource systems as it would without these systems. Others felt that master metering is necessary if energy conservation is to accrue from the use of solar energy and renewable resource devices in multi-unit dwellings.

The proposed guidelines suggests that the master metering standard be evaluated in terms of its benefits and costs with respect to the use of solar energy and renewable resource systems in multi-unit dwellings.

G. Other Comments

Two commenters asserted that DOE lacks authority to issue a guideline applying the 11 PURPA standards to solar energy and renewable resources for the following reasons: (1) A solar energy and renewable resource guideline goes beyond the scope of section 131 of PURPA; (2) the Presidential directive lacks the specificity necessary for the development of a meaningful guideline; and (3) Title I of PURPA does not cover the issue of utility purchase of excess energy from solar energy or renewable resource systems.

Section 131 of PURPA provides that voluntary guidelines prescribed by the Secretary "may not expand the scope or legal effect" of the PURPA standards or establish additional standards. It is DOE's opinion that the proposed guideline does not expand the scope or legal effect of the PURPA standards; neither does the guideline establish additional standards for solar energy and renewable resource systems. The proposed guideline addresses the 11 PURPA standards in the specific context of solar energy and renewable resource use. It does not advocate that solar energy and renewable resource systems be accorded special treatment outside the scope of the PURPA provisions relating to the standards. It is DOE's opinion that the proposed guideline carries out the intent of the Presidential directive, that is, to provide guidance for consideration of the PURPA standards with particular reference to solar energy and renewable resources.

Finally, it should be noted that the proposed guideline does not cover utility purchase of excess energy from solar and renewable resource systems. Section 210 of PURPA and applicable rules promulgated by the Federal Energy Regulatory Commission govern such situations for qualifying cogeneration and small power production facilities.

Several commenters urged DOE to issue general guidelines which provide the flexibility necessary to deal with a relatively new resource system and which give adequate attention to unique, geographic, utility system and energy system characteristics. DOE recognizes this concern and believes that the proposed guideline is general in nature and ensures sufficient flexibility.

III. PURPA Guideline for Solar Energy and Renewable Resources

Appendix A to this Notice contains the proposed guideline. This guideline is intended to provide assistance to State regulatory authorities and nonregulated electric utilities in their consideration of the PURPA standards with respect to the use of solar energy and renewable resources by utility customers.

The guideline sets forth DOE's opinion regarding consideration of the PURPA standards by discussing (1) issues which are pertinent to consideration of the standards with respect to solar energy and renewable resources, and (2) particular factors which should be considered in addressing the issues and making the PURPA determinations. DOE intends to supplement this guideline, as necessary, with technical information manuals and other resource materials which address specific analytical issues that may arise in the consideration of these standards as they affect the introduction and use of solar energy and renewable resource technologies.

The proposed guideline is advisory and contains DOE's opinion on the relationship between consideration of the 11 PURPA standards and the use of solar energy and renewable resources by utility customers. In the proposed guideline, DOE's concern is focused substantively on the following: (1) That utility regulatory and ratemaking policy neither favor nor penalize use of alternative sources of energy by customers, and (2) that consideration of the PURPA standards further the three purposes of Title I of PURPA (that is, conservation of energy supplied by utilities, optimization of the efficient use of facilities and resources by utilities, and equitable rates to consumers).

Following is a brief summary of the proposed guideline for each of the PURPA standards:

Cost of Service. DOE proposes that marginal costing procedures be used in determining cost of service. It is DOE's opinion that marginal cost pricing is consistent with the PURPA goals of efficient use of facilities and resources and conservation of energy. In addition, marginal cost pricing is necessary if rates are, in an economic sense, to be nondiscriminatory and therefore equitable for all customers including solar energy and renewable resource customers.

Rate Design Standards: Declining Block, Time-of-Day, Seasonal and Interruptible. The proposed guideline advocates the development of rate structures which reflect marginal costs to the maximum extent practicable. Depending upon circumstances unique to a utility, these rate structures may include time-of-day rates (where cost-effective), seasonal rates, and interruptible rates.

Load Management Techniques: It is DOE's opinion that, within the context of section 115(c) of PURPA, solar energy and renewable resource systems, suitably configured, may provide load management benefits. Depending on the type of solar energy or renewable resource system used, particularly its storage capacity, a solar energy or renewable resource system may reduce maximum kilowatt demand on the utility. The proposed guideline emphasizes the importance of this effect when a State regulatory authority or nonregulated utility is assessing alternative load management options.

Master Metering. Cost-effective use of solar energy and renewable resource systems in some facilities may not be possible with separate metering, at least for centralized heating and cooling systems. In system instances, master metering in combination with solar energy and renewable resource systems may be appropriate. The proposed guideline recommends that the benefits of and costs associated with the installation of individual meters be carefully weighed against the benefits and costs of master metering combined with solar energy and renewable resource systems.

Automatic Adjustment Clauses. Section 115(e)(1)(A) of PURPA requires that fuel adjustment clauses provide incentives for efficient use of resources, including incentives for economical purchase and use of fuel and electric energy, by a utility. The proposed guideline emphasizes the potential of solar energy and renewable resources as alternatives to the purchase of conventional fuels and sources of power.

Information to Consumers. The proposed guideline points out the importance of consumer knowledge of rate schedules, particularly those pertaining to solar energy and renewable resource customers as a separate class.

Procedures for Termination of Electric Service. Since specific attention to solar energy and renewable resource systems is not necessary when considering this standard, no guideline is proposed.

Advertising. The proposed guideline emphasizes the postive implications of the Residential Conservation Service Program established under the National Energy Conservation Policy Act of 1978 (NECPA), Pub. L. 95–619, 92 Stat. 3206 *et seq.*, for the utilization of solar energy and renewable resource devices by utility customers.

IV. Written Comments and Public Hearing Procedures.

A. Written Comments

The public is invited to participate in this proceeding by submitting to DOE's Economic Regulatory Administration (ERA) information, views or agruments with respect to the proposals set forth in Appendix A to this Notice. Comments should be submitted by 4:30 p.m., e.s.t., December 3, 1979, to the address indicated in the "ADDRESSES" section of this Notice and should be identified on the outside of the envelope and on documents submitted with the designation: "Proposed Voluntary Guideline for Solar Energy and Renewable Resources, Docket No. ERA–R–79–46." Five copies should be submitted. All comments received will be available for public inspection in the DOE Reading Room, GA–152, James Forrestal Building, 1000 Independence Avenue, SW., Washington, D.C. 20585, and the ERA Office of Public Information, Room B–110, 2000 M Street, NW., Washington, D.C. 20461 between the hours of 8:00 a.m. and 4:30 p.m., Monday through Friday.

Pursuant to the provisions of 10 CFR 1004.11 (44 FR 1908, January 8, 1979), any person submitting information which he or she believes to be confidential and which may be exempt by law from public disclosure should submit one complete copy and 15 copies from which information claimed to be confidential has been deleted. In accordance with the procedures established at 10 CFR 1004.11, DOE shall make its own determination with regard to any claim that information submitted be exempt from public disclosure.

B. Public Hearings

(1) Procedures for request to make oral presentation. The times and places for the hearings are indicated in the "DATES" and "ADDRESSES" sections of this Notice. Any person who has an interest in this proposed guideline or represents a person, group or class of persons that has an interest, may make a written request for an opportunity to speak at the public hearings. Requests to speak must be sent to the address shown in the "ADDRESSES" section and be received by November 15, 1979. The request should include a telephone number where the speaker may be contacted through the day before the hearing.

All persons participating in the hearing will be so notified on or before November 20, 1979, for the Washington,

D.C. and Kansas City, Missouri hearings. Speakers should submit 100 copies of their hearing testimony for distribution at the Washington, D.C. hearing by 4:30 p.m. on December 3, 1979, to the Office of Public Hearings Management, U.S. Department of Energy, Room 2313, 2000 M Street, N.W., Washington, D.C. 20461, and bring 100 copies of their hearing testimony to the Kansas City, Missouri hearing at 8:30 a.m. on November 29, 1979.

(2) Conduct of the hearing. ERA reserves the right to schedule participants' presentations and to establish the procedures governing the conduct of the hearing. ERA may limit the length of each presentation, based on the number of persons requesting to be heard. ERA encourages groups that have similar interests to choose one appropriate spokesperson qualified to represent the views of the group.

ERA will designate officials to preside at the hearings. These will not be judicial-type hearings. Questions may be asked only by those conducting the hearings. At the conclusion of all initial oral statements, each person who has made an oral statement will be given the opportunity, if time permits, to make a rebuttal statement. Rebuttal statements will be given in the order in which the initial statements were made and will be subject to time limitations.

Questions to be asked at a hearing should be submitted, in writing, to the presiding officer. The presiding officer will determine whether the question is relevant, and whether time limitations permit it to be presented for answer. The question will be asked of the witness by the presiding officer.

The presiding officer will announce any further procedural rules needed for the proper conduct of the hearings.

ERA will have transcripts made of the hearings and will retain the entire record of the hearings, including the transcript. The record will be available for inspection at the DOE Freedom of Information Office, Room GA–152, James Forrestal Building, 1000 Independence Avenue, SW, Washington, D.C. 20585 and the ERA Office of Public Information, Room B–110, 2000 M Street, NW, Washington, D.C. 20461, between the hours of 8:00 a.m. and 4:30 p.m., Monday through Friday. A copy of the transcript may be purchased from the reporter.

(Public Utility Regulatory Policies Act of 1978, Pub. L. 95–617, 92 Stat. 3117 *et seq.* (16 U.S.C. 2601 *et seq.*); National Energy Conservation Policy Act of 1978, Pub. L. 95–619, 92 Stat. 3206 *et seq.*; Department of Energy Organization Act, Pub. L. 95–91 (42 U.S.C. 7101 *et seq.*))

Issued in Washington, D.C. on October 12, 1979.

Jerry L. Pfeffer,

Assistant Administrator for Utility Systems, Economic Regulatory Administration.

Appendix A—PURPA Guideline No. 1: Solar Energy and Renewable Resources

A. Introduction

The guideline identifies the implications of each of the ratemaking and regulatory policy standards, established by Title I of the Public Utility Regulatory Policies Act of 1978 (PURPA), for the introduction and use of solar energy and renewable resoures within an electric utility's service area. The guideline sets forth the issues and factors the Department of Energy (DOE) considers pertinent to consideration of the PURPA standards as they apply specifically to solar energy and renewable resources. In particular, it addresses the effect that adoption of these standards might have on the utilization of solar energy and renewable resources by utility customers.

B. Coverage of the Guideline

The guideline covers the 11 ratemaking and regulatory policy standards established in PURPA. The guideline does not in any way modify or condition the rules and regulations which have been promulgated by the Federal Energy Regulatory Commission (FERC) under section 133 of PURPA for cost-of-service information or which will be promulgated by the FERC under section 210 of PURPA for small power producers and cogenerators. DOE's Economic Regulatory Administration (ERA) has in the past submitted its opinions on cost-of-service and "buy-back" rates to the FERC and may continue to submit its opinions on section 210 rules in the future. Consequently, this guideline covers neither the sale of electric energy to qualifying facilities nor the purchase of energy from such facilities if the sale and purchase are subject to the provisions of section 210 and any rules promulgated pursuant thereto.

C. Definitions

As used in this guideline, except as otherwise specifically provided—

"Solar energy and renewable resources" means energy received from the sun directly in the form of radiant energy, including photovoltaics, and energy received from the sun indirectly in the form of stored radiant energy in biomass (i.e., wood, vegetation and organic solid wastes), the atmosphere, heated surface waters, the potential and kinetic energy of water elevated via the hydrological cycle, and the kinetic energy of the wind. The term is further restricted to dispersed (on-site) technologies for which solar energy and renewable resource systems provide only a portion of end-use requirements, the remainder being provided through retail purchases of utility generated electricity.

"Class" means, with respect to electric consumers, any group or such consumers who have similar characteristics of electric energy use.

"Electric consumer" means any person, State agency or Federal agency, to which electric energy is sold other than for purposes of resale.

"Electric utility" means any person, State agency, or Federal agency, which sells electric energy.

"Federal agency" means an executive agency (as defined in section 105 of Title 5 of the United States Code).

"Load management technique" means any technique (other than a time-of-day or seasonal rate) to reduce the maximum kilowatt demand on the electric utility, including ripple or radio control mechanisms, and other types of interruptible electric service, energy storage devices, and load-limiting devices.

"Nonregulated electric utility" means any electric utility other than a State regulated electric utility.

"Person" means an individual, partnership, corporation, unincorporated association or any other group organization or entity.

"Rate" means (a) any price, rate, charge, or classification made, demanded, observed, or received with respect to sale of electric energy by an electric utility to an electric consumer, (b) any rule, regulation, or practice respecting any such rate, charge, or classification, and (c) any contract pertaining to the sale of electric energy to an electric consumer.

"Ratemaking authority" means authority to fix, modify, approve, or disapprove rates.

"Rate schedule" means the designation of the rates which an electric utility charges for electric energy.

"Secretary" means the Secretary of Energy.

"State" means and State, the District of Columbia, and Puerto Rico.

"State agency" means a State, political Subdivision thereof, and any agency or instrumentality of either.

"State regulated electric utility" means any electric utility with respect to which a State regulatory authority has ratemaking authority.

"State regulatory authority" means any State agency which has ratemaking authority with respect to the sale of electric energy by any electric utility (other than such State agency), and in the case of an electric utility with respect to which the Tennessee Valley Authority has ratemaking authority, such term means the Tennessee Valley Authority.

D. Table of Contents

1. Cost-of-Service Standard.
2. Rate Design Standards: Declining Block, Time-of-Day, Seasonal, and Interruptible.
3. Load Management Technique Standard.
4. Master Metering Standard.
5. Automatic Adjustment Clauses Standard.
6. Termination-of-Service Standard.
7. Information to Consumers Standard.
8. Advertising Standard.

E. Cost-of-Service Standard

Under section 111(d)(1) of PURPA, the following is established as a Federal standard: rates charged by any electric utility for providing electric service to each class of electric consumers shall be designed, to the maximum extent practicable, to reflect the costs of providing electric service to such class. In addition, section 115(a) of PURPA requires that when a State regulatory authority or nonregulated utility prescribes methods for undertaking cost-of-service studies, it should take into account the extent to which total costs to an electric utility are likely to change if additional capacity is added to meet peak demand relative to base demand and additional kilowatt-hours of electric energy are delivered to electric consumers.

1. Costing procedures. Marginal costing procedures, rather than embedded costing procedures, should be used in determining cost of service for the following reasons:

a. Although Title I of PURPA does not specifically mention marginal costs (nor does it specifically mention accounting methods or embedded costs), DOE interprets section 115(a) as establishing marginal costing principles and requiring that these be taken into account in considering the cost-of-service standard.

b. Marginal costing procedures are more likely to be consistent with the PURPA objectives of coefficient use of facilities and resources and energy conservation than embedded costing procedures. In an economy where resources, and in particular fossil fuels, are scarce, the production of a good or service must be justified by the satisfaction individuals obtain from the consumption of that good or service. Scarce resources should be used to produce a good, only if consumers are willing to pay a price for it which equals or exceeds the value of the resources needed to produce it. If consumers are not willing to pay such a price, scarce resources should not be used to produce that good but should instead be used to produce other goods for which consumers are willing to pay a price equal to the value of the resources used in production.

In order for scarce fuels to be used efficiently, consumers of electricity should face a price which reflects to the maximum extent practicable the real resource cost of producing one more or one less kilowatt-hour or kilowatt. When confronted with such a price consumers can more accurately determine whether they want additional scarce resources to be used to produce more electricity or whether they would prefer that those resources be used to produce other goods. Under average cost pricing consumers' decisions to purchase or not to purchase an additional unit of electricity are frequently not based on adequate information about real resource costs. As a consequence, in any rating period more (if average costs are less than marginal costs) or less (if average costs are more than marginal costs) electricity is consumed than consumers would be willing to pay for if prices reflected marginal costs. As a consequence, scarce resources are not used in that rating period in a manner which will best satisfy consumers' needs.

c. In an economic sense, nondiscriminatory or equitable treatment of both users and nonusers of solar energy and renewable resource systems is more likely to occur if electricity rates for both are based on marginal costs than if rates for both are based on embedded costs. To the extent practicable, marginal costing procedures will result in equal treatment for all customers who impose the same costs (for a kilowatt-hour or a kilowatt of demand) on an electric utility. Customers who impose different levels of cost (for a kilowatt-hour or a kilowatt of demand) will be treated differently but only to the degree indicated by differences in the costs they impose on the utility.

With respect to solar energy and renewable resource systems, rates that reflect marginal cost of service will encourage use of these systems commensurate with the costs of the resources needed to build and operate them, and the costs of alternate approaches to meeting the nation's energy needs. Economic discrimination, whether favorable or unfavorable to solar energy and renewable resource systems, does not occur under marginal cost pricing.

Energy Savings. Solar energy and renewable resource systems will reduce the amount of electric energy consumed by conventional electric end-use devices which they displace in whole or in part. As a consequence, scarce fossil fuels will be conserved. The potential impact of solar energy and renewable resource technologies on customers' demand for electric energy need not, however, delay construction of new nuclear or coal capacity, which would replace existing oil and gas baseload capacity. Replacement of oil and gas baseload capacity should still occur to the extent economically justified.

To determine the savings in scarce fossil fuels that may accrue to the electric utility as a consequence of the use and introduction of solar energy and renewable resource systems, the following should be considered:

a. Local meteorological conditions—how they affect the operation of solar energy and renewable resource systems and thus the utility's load curves;

b. Timing of a utility's peak demand;

c. Storage capacity of solar energy and renewable resource systems;

d. Extent of solar penetration;

e. Reliability of solar energy and renewable resource systems;

f. Utility fuel mix as a function of load range; and

g. Characteristics of the solar energy and renewable resource system load.

F. Rate Design Standards: Declining Block, Time-of-Day, Seasonal, and Interruptible

Section 111(d) (2) through (5) of PURPA establishes Federal standards with respect to declining block rates, time-of-day rates, seasonal rates, and interruptible rates. These standards provide that declining block energy charges that are not cost-based shall be eliminated; time-of-day rates shall be established, if cost-effective, where rates vary by time-of-day; seasonal rates shall be established where costs vary by season; and interruptible rates based on the costs of providing interruptible service shall be offered to commercial and industrial customers.

1. Nondiscriminatory rates. Whether time-of-day, seasonal, interruptible, and declining block rates are discriminatory in an economic sense depends on whether and how well they track marginal costs. Rates that do not reflect marginal costs to the maximum extent

practicable are likely to be discriminatory in an economic sense, whereas, rates that do reflect marginal costs to the maximum extent practicable are likely to be nondiscriminatory in an economic sense.

Two consequences may result from the economic discrimination brought about by rates which do not reflect marginal costs. On the one hand, levels of investment in solar energy and renewable resource systems may be lower and, consequently, savings of oil and gas may be smaller than would result with marginal cost-based rates. That is, fewer customers may invest in solar energy and renewable resource systems and those that do may build systems with smaller energy displacement capability, smaller storage capacity, and more limited control capability for the operation of storage systems than they would under marginal cost-based rates. On the other hand, if rates economically discriminate in favor of solar energy and renewable resource customers, more customers may invest in solar energy and renewable resource systems and may build larger systems than would with marginal cost-based rates. In this situation, many of those who do not invest in solar energy and renewable resource systems will pay higher bills and subsidize the consumption of electricity by those who do invest in these systems.

2. Time-of-day and seasonal rates. When time-of-day and seasonal rates are based on marginal costs, a customer is provided with an incentive to shift consumption from times of high marginal cost (peak period) to times of low marginal cost (offpeak period). Solar energy and renewable resource systems permit a customer to maintain consumption during the peak period and yet avoid the high costs of electical energy. Inclusion of chargeable storage capability in these systems will permit further displacement of onpeak electric consumption (if meteorological conditions affect functioning) and may permit displacement of offpeak consumption.

As provided for in section 115 of PURPA, time-of-day rates are determined to be cost-effective if the long-run benefits to the electric utility and its electric customers are likely to exceed metering and other associated costs. Where metering costs for time-of-day rates are not justified by the benefits, seasonal rates which track marginal costs may be an appropriate alternative. Such rates do not require the installation of meters and may permit nondiscriminatory treatment, in an economic sense, of customers.

3. Interruptible rates. Interruptible rates and-or offpeak storage rates which are based on marginal costs may also be effective rate designs for solar energy and renewable resource systems. These rates provide incentives for solar energy and renewable resource investments and provide a means of limiting the effect high levels of market penetration by these systems may have on utility peak demand. In comparison with other rate designs, interruptible rates may produce lower electric bills for solar energy and renewable resource customers. In addition, they can assure peak period capacity savings from these customers.

4. Revenue related rate adjustments. With rate-of-return regulation, it may not be possible to set prices equal to marginal costs without exceeding or falling short of a utility's allowed revenue level. Under these circumstances adjustments to marginal cost-based rates may be required. These adjustments should be made in a manner which minimizes any losses in the efficient use of resources and facilities. DOE recognizes that the adjustments to be made in any instance will also be influenced by equity considerations; however, the adjustments should be reviewed in terms of their discriminatory consequences, for or against, solar energy and renewable resouce customers.

5. Customer class. For ratemaking purposes, a separate class or classes for solar energy and renewable resource customers should be established if the load curves of and costs to serve these customers vary significantly from the load curves and costs to serve customers in the existing rate class of which solar customers would be a part. In general, the creation of a separate tariff class or modification of an existing one for application to customers using solar energy and renewable resource systems should satisfy the following conditions:

a. The costs of serving the solar group load pattern differs substantially from those imposed by the existing customer classes;

b. There is no reasonably available method of reflecting these cost differences within the existing classes;

c. The solar group is discretely identifiable; and

d. The costs of administration (including separate billing or special metering equipment) are not excessive.

Consistent with these criteria, a separate customer class may be established if solar energy and renewable resource systems possess special characteristics which offer unique opportunities in rate design to promote their use as load management devices. Rates offered to customers in this class should reflect marginal costs of service.

6. Fuel adjustment clauses. To the maximum extent practicable, the fuel cost surcharge imposed under a fuel adjustment clause should be time differentiated on a marginal cost basis. A nontime differentiated surcharge raises offpeak electricity rates proportionately more than onpeak electricity rates. As a consequence, the incorporation of chargeable storage capacity in solar energy and renewable resource systems is discouraged.

G. Load Management Techniques Standard

Under section 111(d)(6) of PURPA, electric utilities are required to offer to customers load management techniques which a State regulatory authority or nonregulated electric utility determines are practicable, cost-effective, reliable, and will provide useful energy or capacity management advantages. A load management technique is cost-effective if it is likely to reduce maximum kilowatt demand and the long-run cost savings to the utility of such reduction are likely to exceed the long-run costs to the utility associated with implementation.

With chargeable storage capacity, solar energy and renewable resource systems may provide substantial load management benefits within the definition provided in section 3(8) of PURPA. Utilities should be encouraged to provide information about the load management implications of solar energy and renewable resource systems. In addition, when a utility is assessing alternative load management options, solar energy and renewable resource systems should be considered in that assessment.

Any evaluation of the load management potential of solar energy and renewable resource systems should address the following:

1. Effect on utility load curve, i.e., predictability of solar energy and renewable resource customer demand;

2. Utility fuel mix by load type;

3. Costs associated with load management potential of solar energy and renewable resource systems;

4. Interface with other load management techniques;

5. Levels of penetration necessary to produce a beneficial impact; and

6. Utility system reliability.

H. Master Metering Standard

Section 115(d) of PURPA requires separate metering for any new building

if there is more than one unit in the building, the occupant controls a portion of the electric energy used in his unit, and with respect to such portion of electric energy, the long-run benefits to the electric consumers in the building exceed the costs of purchasing and installing separate meters in the building.

In requiring that the master metering standard be considered, Congress sought to encourage conservation of energy. Separate metering of individual units provides consumers with information about the direct costs of their consumption and improves their ability to determine how they would like scarce resources to be used. In making determinations on the master metering standard Congress intended that State utility regulatory authorities and nonregulated utilities be guided not only by potential energy savings but also by the cost of purchasing and installing individual meters. Under section 115(d)(3) of PURPA, separate metering for any new building is appropriate if the long-run benefits of the meters exceed the costs of purchase and installation.

However, cost-effective use of solar energy and renewable resource options in some facilities may not be possible with separate metering, at least for centralized heating and cooling systems. In such instances, master metering in combination with solar energy and renewable resource systems may be appropriate. Such a combination might produce greater conservation of energy and scarce fossil fuels than would separate metering without solar energy and renewable resource systems. To address this possibility the following should be included in the consideration of this standard:

1. Scarce fossil fuel savings with master metering and separate metering;
2. The life expectancy of the building;
3. The most likely heating and cooling system alternatives and their characteristics; and
4. The possibility of separate metering for a portion of total electric consumption.

I. Automatic Adjustment Clauses Standard

As specified in sections 113(b)(2) and 115(e) of PURPA, automatic adjustment clauses may not be allowed unless they provide incentives to utilities for economic purchase and use of fuel and electric energy. It must be determined, in an evidentiary hearing at least once every 4 years, that an automatic adjustment clause provides such incentives. In addition, at least every 2 years, the clause must be reviewed to insure maximum economies in those operations and purchases which affect the rates to which the clause applies.

Although the standard is primarily procedural in nature, the intent of Congress was to encourage the efficient use of resources and the economical purchase of fuel and electric energy by an electric utility. Consistent with this intent is a consideration by electric utilities of centralized (nondispersed) solar energy and renewable resource technologies as nonconventional means to generate electricity. Prior demonstration that these technologies were evaluated for their usefulness to the electric utility in conserving scarce fossil fuels should be made a condition of approval of an automatic adjustment clause.

In considering solar energy and renewable resource technologies as nonconventional sources for the generation of electricity, a utility should give specific attention to the following:

1. Alternative possible technologies such as:
   a. Biomass;
   b. Solar thermal;
   c. Wind;
   d. Low head hydro; and
   e. Photovoltaics.
2. Potential savings in scarce fossil fuel.
3. Alternative means of implementation.

J. Information to Consumers Standard

Section 113(b)(3) of PURPA establishes the information to consumers standard which requires each electric utility to transmit information regarding rate schedules to each of its electric consumers in accordance with the requirements of section 115(f) of PURPA.

Under this standard an electric utility should be required to provide information to customers about the implications of its rate structure for the use of solar energy and renewable resource systems. Possible cost savings a customer with these systems may experience under the utility's rate structure should be identified. In addition, any provision that would allow a solar energy or renewable resource customer to take advantage of a special rate structure or require that he be placed on such a rate structure should be explained.

K. Procedures for Termination of Electric Service Standard

Section 113(b)(4) of PURPA establishes the termination of service standard which requires that electric utilities may not terminate electric service to any electric consumer except pursuant to procedures described in section 115(g). Section 115(g) specifies that no electric service to an electric consumer may be terminated without reasonable prior notice. Also, under certain circumstances, electric service may not be terminated during any period when termination of service to an electric consumer would be especially dangerous to health.

Specific attention to solar energy and renewable resource technologies is not necessary when considering this standard.

L. Advertising Standard

Section 113(b)(5) (for electric) of PURPA established the advertising standard which requires that an electric utility may not recover from any person other than the shareholders (or other owners) of such utility any direct or indirect expenditure by such utility for promotional or political advertising. Among those advertising expenses identified in PURPA as appropriate for inclusion in electricity bills are advertising which informs electric consumers how they can conserve energy or reduce peak demand for electric energy, and advertising which promotes the use of energy efficient appliances, equipment or services.

In considering this standard specific attention should be given to the implications for solar energy and renewable resources of the Residential Conservation Service Program established by the National Energy Conservation Policy Act of 1978. This program, which is mandatory for all utilities whose annual retail sales of electricity exceed 750 million kilowatt-hours, requires that covered utilities provide certain types of information about suggested residential energy conservation and renewable resource measures to all residential customers. The suggested measures may include solar domestic hot water systems, active solar space heating systems, combined active solar space heating and solar domestic hot water system and passive solar space heating and cooling systems, depending on the service territory and the customer's residential building type.

The information provided to consumers must include the following:

1. A list of the suggested measures;
2. A reasonable estimate of the savings in energy costs which are likely to result from installation of each suggested measure in a typical residence;
3. An offer by the utility to assist the residential customer by arranging for a loan or by arranging for the installation of suggested measures;
4. The offer of a list of contractors, suppliers and lenders who provide services in the utility's service territory and meet certain minimum requirements.

[FR Doc. 79-32233 Filed 10-17-79; 8:45 am]
BILLING CODE 6450-01-M